[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0902; Product Identifier 2018-NM-047-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 787 series airplanes. This proposed AD was prompted by a report of an uncommanded descent and turn that occurred after an inflight switch to the spare flight management function (FMF). This proposed AD would require an inspection of the flight management system (FMS) to determine if certain operational program software (OPS) is installed and installation of new FMS OPS and a software check if necessary. For certain airplanes, this proposed AD would also require concurrent actions. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0902.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0902; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Nelson Sanchez, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3543; email: nelson.sanchez@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2018-0902; Product Identifier 2018-NM-047-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received a report of an uncommanded descent and turn that occurred when the spare FMF became the master FMF in flight. When the master FMF and spare FMF are operating normally, the FMF synchronization function sends data from the master to the spare so they will have the same flight data. It was found that an anomaly had prevented this communication for several flights, causing stale flight data to be

retained in the spare FMF. In addition, no mechanism is currently in place to detect, remove, and replace stale flight data. This condition, if not addressed, could result in controlled flight into terrain or a mid-air collision.

Related Service Information under 1 CFR part 51

We reviewed Boeing Alert Requirements Bulletin B787-81205-SB340038-00 RB, Issue 001, dated November 16, 2017. The service information describes procedures for installing FMS OPS Block Point 3B (BP3B) and performing a software check.

We also reviewed Boeing Service Bulletin B787-81205-SB340013-00, Issue 002, dated May 6, 2016. The service information describes procedures for installing FMS OPS Block Point 3 (BP3) and performing a software check. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishment of the actions identified in the service information described previously, except as discussed under "Differences Between this Proposed AD and the Service Information," and except for any differences identified as exceptions in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-0902.

Explanation of Requirements Bulletin

The FAA worked in conjunction with industry, under the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC), to enhance the AD system. One enhancement is a process for annotating which steps in the service information are "required for compliance" (RC) with an AD. Boeing has implemented this RC concept into Boeing service bulletins.

In an effort to further improve the quality of ADs and AD-related Boeing service information, a joint process improvement initiative was worked between the FAA and Boeing. The initiative resulted in the development of a new process in which the service information more clearly identifies the actions needed to address the unsafe condition in the "Accomplishment Instructions." The new process results in a Boeing Requirements Bulletin, which contains only the actions needed to address the unsafe condition (i.e., only the RC actions).

Differences Between this Proposed AD and the Service Information

The effectivity of Boeing Alert Requirements Bulletin B787-81205-SB340038-00 RB, Issue 001, dated November 16, 2017, is limited to certain Model 787-8 and 787-9 airplanes. However, the applicability of this proposed AD includes all Boeing Model 787 series airplanes. Because the affected software versions are rotable parts, we have determined that these parts could later be installed on airplanes that were initially

delivered with acceptable software versions, thereby subjecting those airplanes to the unsafe condition. This difference has been coordinated with Boeing.

Costs of Compliance

We estimate that this proposed AD affects 144 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

Estimated costs for required actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Records check or inspection	1 work-hour X $85 per hour = $85	$0	$85	$12,240
Software installation	4 work-hours X $85 per hour = $340	$0	$340	Up to $48,960
Concurrent actions	4 work-hours X $85 per hour = $340	$0	$340	Up to $48,960

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This proposed AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2018-0902; Product Identifier 2018-NM-047-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 787 series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 34, Navigation.

(e) Unsafe Condition

This AD was prompted by a report of an uncommanded descent and turn that occurred after an inflight switch to the spare flight management function (FMF), due to the retention of stale flight data in the spare FMF. We are issuing this AD to address the retention of stale flight data in the spare FMF, which, if not addressed, could result in controlled flight into terrain or a mid-air collision.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For Boeing Model 787 series airplanes that have an original certificate of airworthiness or export certificate of airworthiness issued on or before the effective date of this AD: Within 12 months after the effective date of this AD, inspect the flight management system (FMS) to determine if operational program software (OPS) part number (P/N) HNP5F-AL11-5010 or HNP58-AL11-5006 is installed. A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of the FMS OPS can be conclusively determined from that review.

(2) If, during any inspection or records review required by paragraph (g)(1) of this AD, FMS OPS P/N HNP5F-AL11-5010 or HNP58-AL11-5006 is found: Within 12 months after the effective date of this AD, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB340038-00 RB, Issue 001, dated November 16, 2017; except where Boeing Alert Requirements Bulletin B787-81205-SB340038-00 RB, Issue 001, dated November 16, 2017, specifies installing 34 FMS OPS Block Point 3B, P/N

HNP5E-AL11-5011, this AD requires installing P/N HNP5E-AL11-5011 or later-approved software versions. Later-approved software versions are only those Boeing software versions that are approved as a replacement for the applicable software, and are approved as part of the type design by the FAA or the Boeing Commercial Airplanes Organization Designation Authorization (ODA) after issuance of Boeing Alert Requirements Bulletin B787-81205-SB340038-00 RB, Issue 001, dated November 16, 2017.

Note 1 to paragraph (g) of this AD: Guidance for accomplishing the actions required by paragraph (g) of this AD can be found in Boeing Alert Service Bulletin B787-81205-SB340038-00, Issue 001, dated November 16, 2017, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB340038-00 RB, Issue 001, dated November 16, 2017.

(h) Concurrent Requirements

For airplanes identified in Boeing Service Bulletin B787-81205-SB340013-00, Issue 002, dated May 6, 2016: Prior to or concurrently with the action required by paragraph (g) of this AD, install FMS, Thrust Management System (TMS), and Communication Management Function (CMF) software identified in Boeing Service Bulletin B787-81205-SB340013-00, Issue 002, dated May 6, 2016, and do a software check, in accordance with the Accomplishment Instructions of Boeing Service Bulletin B787-81205-SB340013-00, Issue 002, dated May 6, 2016; except where Boeing Service Bulletin B787-81205-SB340013-00, Issue 002, dated May 6, 2016, specifies installing software, this AD requires installing that software or later-approved software versions. Later-approved software versions are only those Boeing software versions that are

approved as a replacement for the applicable software, and are approved as part of the type design by the FAA or the Boeing Commercial Airplanes ODA after issuance of Boeing Service Bulletin B787-81205-SB340013-00, Issue 002, dated May 6, 2016. If the software check fails, before further flight, accomplish corrective actions and repeat the software check and applicable corrective actions until the software check is passed.

(i) Parts Installation Prohibition

As of the effective date of this AD, installation on any airplane of FMS OPS version HNP5F-AL11-5010 or HNP58-AL11-5006 is prohibited, except as required by paragraph (h) of this AD.

(j) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (h) of this AD, if those actions were performed before the effective date of this AD using Boeing Service Bulletin B787-81205-SB340013-00, Issue 001, dated December 23, 2015.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (l)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes ODA that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(l) Related Information

(1) For more information about this AD, contact Nelson Sanchez, Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3543; email: nelson.sanchez@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet https://www.myboeingfleet.com. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued in Des Moines, Washington, on October 10, 2018.

Michael Kaszycki,
Acting Director,
System Oversight Division,
Aircraft Certification Service.
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